

Amendments to the Drawings

Please substitute the enclosed formal drawing sheets 1/6 & 2/6 for the corresponding formal drawing sheets originally filed with the application. These new formal drawing sheets are submitted responsive to the drawings objection stated in the Office Action and described further in the Remarks set forth below.

Attachments: Replacement formal drawing sheets 1/6 & 2/6.

Remarks

Entry of the amendments presented, and withdrawal of the drawings objections, and claims objections and rejections are respectfully requested. Claims 1-9 remain pending. The objections and rejections stated in the Office Action are addressed separately below in the order raised in the Office Action.

Drawings Objections:

Responsive to the drawings objections, replacement drawing sheets 1/6 & 2/6 containing replacement FIGS. 1 & 2 are submitted herewith. In these figures, a comparator block is added to each schematic at the input INP. This comparator block is discussed throughout the application, and corresponds to the “upstream comparator” recited in claim 1 and the “comparator” of claim 5.

Furthermore, replacement FIGS. 1 & 2 presented herewith contain labels within the illustrated symbols responsive to the drawings objection noted at page 3 of the Office Action. These labels are drawn from the description in the specification, and no new matter is added to the application by the amendments presented.

Claims Objection:

Claims 7-9 are amended as suggested at page 4 of the Office Action, and therefore, reconsideration and withdrawal of the claims objection are respectfully requested.

35 U.S.C. §101:

Prior pending claims 1-4 were rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. Responsive to this rejection, claims 1-4 are amended herein to recite the structures performing the steps of the method. Therefore, the method recited is tied to a particular machine/apparatus, and is thus believed to recite patentable subject matter under 35 U.S.C. §101.

In addition, responsive to the rejection noted at page 5 of the Office Action relative to the comparator, claim 1 presented herewith recites that the input signal is delivered by the upstream comparator. Based on this amendment, the comparator forms part of the recited protocol, performing a step of the method recited in claim 1.

Based on the above-noted amendments, reconsideration and withdrawal of the 35 U.S.C. §101 rejection to claims 1-4 are respectfully requested.

35 U.S.C. §112:

Responsive to the rejection of claims 1 & 5 under 35 U.S.C. §112, second paragraph, independent claims 1 & 5 are amended herein to recite that the receiver is operating according to the Fast InfraRed (FIR) IrDA standard. The FIR specification of the IrDA standard is well known, and was finalized prior to Applicants' filing date. (By way of example, reference the document attached hereto as Appendix A, entitled "InfraRed Data Association Serial Infrared Physical Layer Specification," Version 1.4, May 30, 2001.) In view of this clarifying amendment, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. §112, second paragraph, rejection to claims 1 & 5.

Furthermore, claim 5 is amended herein to recite that the upstream comparator is part of the arrangement. Based upon this clarification, withdrawal of the further 35 U.S.C. §112 rejection to claim 5 is respectfully requested.

35 U.S.C. §103:

Initially, Applicants gratefully acknowledge the indication of allowability of claim 6 if rewritten in independent form including all the limitations of the base claim and any intervening claims, as well as the indication of allowability of claims 8 & 9 if rewritten to overcome the above-described claims objections and rewritten in independent form including all the limitations of base claim and any intervening claims. Presently, these claims have not been rewritten in independent form, however, since the independent claims from which they depend are believed to be in condition for allowance for the reasons stated hereinbelow.

Also initially, Applicants note that claims 2 & 4 do not appear to be substantively rejected in the Office Action. Therefore, based upon the amendments to claim 1 to address the above-described 35 U.S.C. §101 and 35 U.S.C. §112 rejections, an indication of allowability of dependent claims 2 & 4 is also respectfully requested.

In the Office Action, claims 1 & 3 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ransijn (U.S. Patent No. 5,014,286; hereinafter Ransijn) in view of Holcombe (U.S. Patent No. 6,240,283; hereinafter Holcombe), and further in view of Beard (U.S. Patent No. 5,838,471; hereinafter Beard), and claims 5 & 7 were rejected under 35 U.S.C. §103(a) as being unpatentable over Akashi (U.S. Patent Publication No. 2002/0154373; hereinafter Akashi) in view of Nishizono et al. (U.S. Patent Publication No. 2004/0075484). These rejections are respectfully traversed to any extent deemed applicable to the claims presented herewith, and reconsideration thereof is requested.

In claim 1, Applicants recite a method of forming an output reception pulse in a receiver operating according to the Fast InfraRed (FIR) IrDA standard. In accordance with Applicants' protocol, an input signal from an upstream comparator is newly formed and output as the output reception pulse. The protocol includes, in a first step, delivering the input signal from the upstream comparator to a delay arrangement, where the input signal is delayed and an output reception pulse from an output pulse production arrangement is started. Upon completion of the generation of the time reference, an examination of a level of the input signal is conducted which carries out a back-reference to the duration of the output reception pulse. Subject to results of the examination, the duration of the output reception pulse is adjusted by the output pulse production arrangement, wherein duration of the output reception pulse is independent of the specific, actual pulse duration of the input signal delivered by the upstream comparator. Applicants respectfully submit that numerous aspects of this protocol distinguish their invention from the teachings and suggestions of the applied art.

Ransijn discloses a delay generator which includes a delay line providing a delay time τ . The input signal in Ransijn is delayed by the round-trip delay time through the delayed line, *and the pulse duration of received pulses and output pulses are the same*. Holcombe discloses a method and apparatus for feedback mitigation in a low speed communications receiver. To the

extent analogous to Applicants' recited protocol, the method and apparatus of Holcombe essentially generates the signal "INP", that is, the input signal from Applicants' recited upstream comparator. The arrangement in Holcombe can thus be compared with Applicants' upstream comparator, and the protocol disclosed therein addresses a solution for a low speed communications receiver.

Beard discloses an infrared data communications system employing echo cancellation to remove echo signals in infrared transmissions received by an infrared receiver transducer. A pulse stretcher circuit is utilized to increase the pulse width duration of the version of the data pulse width to be combined with the received data pulse signal in order to ensure correct timing and cancellation of received echo signals over a range of echo signal propagation delay times. Consequently, the infrared receiver has to be non-active during a specific time. In Beard, pulse widths are compressed before transmission and decompressed after reception, in order to reduce the power consumption of the transmitter infrared LEDs. Thus, the "adjusts pulse widths" in Beard is for a protocol completely different from Applicants' recited invention. The "adjusts pulse widths" feature in Beard is associated with a compressing and decompressing pulse width processing (for reducing power consumption as disclosed at col. 3, lines 25-31 of Beard).

Applicants respectfully submit that independent claim 1 presented herewith patentably distinguishes over the individual and combined teachings of Ransijn, Holcombe and Beard. Applicants' recited protocol is directed to a receiver operating according to the Fast InfraRed (FIR) IrDA standard. Within this environment, Applicants recite a process wherein an input signal from an upstream comparator is evaluated and an output reception pulse is generated independent of the specific, actual pulse duration of the input signal delivered by the upstream comparator. In accordance with Applicants' process, the generated pulse has one of only two output pulse widths, pursuant to the recited IrDA standard in the specification of FIR. Further, in accordance with Applicants' recited protocol, the duration of the output reception pulse is adjusted by the output pulse production arrangement subject to the results of the examination of the level of the input signal, which includes back-referencing duration of the output reception pulse. Applicants respectfully submit that Ransijn, Holcombe and Beard do not individually or collectively teach or suggest such a protocol. In this regard, Applicants note that the output pulse and input pulse in Ransijn are the same duration, and the pulse width adjustments in Beard do

not teach or suggest the particularly recited adjustment of Applicants' protocol. In Beard, the pulse width adjustment is to compress and decompress pulse signals for reducing power consumption.

In addition, and as noted, Applicants' recited invention is directed to a receiver operating according to the Fast InfraRed (FIR) IrDA standard, while none of the applied art is directed to that standard.

For at least the above-noted reasons, Applicants respectfully submit that independent claim 1 presented herewith patentably distinguishes over the applied and known art.

Independent claim 5 is believed allowable over Akashi in view of Nishizono for the same reasons noted above with respect to claim 1 relative to Ransijn, Holcombe and Beard. Neither Akashi or Nishizono disclose an arrangement for forming an output reception pulse in a receiver operating according to the Fast InfraRed (FIR) IrDA standard. Further, neither publication describes an arrangement such as recited by Applicants in claim 5 wherein duration of the output reception pulse is adjusted by the output pulse producing arrangement, and duration of the output reception pulse is independent of actual pulse duration of the input comparator signal. Additionally, Applicants' arrangement recited in claim 5 is believed distinct from the teachings of Akashi, either alone or in combination with Nishizono.

Further, in accordance with Applicants' recited invention, a first output of the delay arrangement is connected to a first input of a downstream output pulse producing arrangement, and a second output of the delay element is connected to a time reference generating arrangement. *These first and second outputs are different outputs from the delay arrangement*, which is now expressly recited in amended claim 5. In contrast, to the extent analogized to Applicants' arrangement, each output of the "delay arrangement" in Akashi is connected to both a "time reference generation arrangement" and the "output pulse production arrangement" again using the analogies of the Office Action. In accordance with Applicants' amended claim 5, however, these different outputs are coupled to different arrangements of the circuit, that is, one (i.e., first output) is connected to the downstream output pulse producing arrangement and the other (i.e., second output) is connected to the time reference generating arrangement. No such

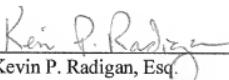
arrangement is taught by Akashi, and to modify Akashi's circuit to achieve such an arrangement would result in Akashi's bit synchronizer being nonfunctional.

For at least the above-noted reasons, Applicants respectfully submit that independent claim 5 patentably distinguishes over the applied and known art.

All claims are believed to be in condition for allowance, and such action is respectfully requested.

Should any issue remain unresolved, however, Applicants' undersigned representative requests a telephone interview with the Examiner to further discuss the matter in the hope of advancing prosecution of the subject application.

Respectfully submitted,



Kevin P. Radigan, Esq.
Attorney for Applicants
Registration No.: 31,789

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HESLIN ROTHENBERG FARLEY & MESITI P.C.
5 Columbia Circle
Albany, New York 12203-5160
Telephone: (518) 452-5600
Facsimile: (518) 452-5579